

WHAT IS CLAIMED IS:

1. An MPOA (Multi-Protocol Over ATM (Asynchronous Transfer Mode)) server, comprising:

means for reception of MPOA Resolution Request packets;

5 means for judgment whether a target of an MPOA Resolution Request packet is on a local subnet;

10 means for judgment whether the physical configuration of a transmission network interface, which is that of the own node, toward the target or the next hop is a kind of the ATM, and the transmission network interface is set to be logically MPOA-operable; and

15 means for transmission of an NHRP (NBMA (Non-Broadcast Multi-Access) Next Hop Resolution Protocol) Resolution Request packet, which is made based on the MPOA Resolution Request packet, and to which the MAC (Media Access Control) address of the transmission network interface is added, when it is judged that the target is not on the local subnet, the physical configuration of the transmission network interface is a kind of the ATM, and the transmission network interface is set to be logically MPOA-operable.

20 2. The MPOA server according to claim 1, wherein the MAC address is added as a Vendor-Private Extension.

3. The MPOA server according to claim 1, wherein the MAC address is added as a normal MPOA Extension.

4. The MPOA server according to claim 1, further comprising:

25 means for transmission of an MPOA Cache Imposition Request packet, in which the MAC address of the transmission network interface is included as a source MAC address, and the MAC address of the target as a destination MAC address, when it is judged that the target is on the local subnet, the physical configuration of the transmission network interface is a

kind of the ATM, and the transmission network interface is set to be logically MPOA-operable.

5. The MPOA server according to claim 1, further comprising:

means for execution of error processing, when it is not judged that

5 the physical configuration of the transmission network interface is a kind of the ATM, and the transmission network interface is set to be logically MPOA-operable.

6. The MPOA server according to claim 1, further comprising:

means for reception of NHRP Resolution Reply packets;

10 means for judgment whether the NHRP Resolution Reply packet is addressed to the own node;

means for judgment whether a MAC address is added to the NHRP Resolution Reply packet;

means for deletion of the following MAC address from the NHRP

15 Resolution Reply packet, when it is judged that the NHRP Resolution Reply packet is addressed to the own node, and a MAC address is added to the NHRP Resolution Reply packet; and

means for transmission of an MPOA Resolution Reply packet made based on the NHRP Resolution Reply packet from which the MAC address is
20 deleted.

7. An MPOA server, comprising:

means for reception of NHRP Resolution Request packets;

means for judgment whether a target in the NHRP Resolution Request packet is on the local subnet;

25 means for judgment whether the physical configuration of a transmission network interface, which is that of the own node, toward the target or the next hop is a kind of the ATM, and the transmission network interface is set to be logically MPOA-operable;

means for judgment whether, a MAC address is added to the NHRP Resolution Request packet; and

means for transmission of an NHRP Resolution Request packet after the following MAC address is overwritten by the MAC address of the

- 5 transmission network interface, when it is judged that the target is not on the local subnet, the physical configuration of the transmission network interface is a kind of the ATM, the transmission network interface is set to be logically MPOA-operable, and a MAC address is added to the NHRP Resolution Request packet.

10 8. The MPOA server according to claim 7, wherein the MAC address is added as a Vendor-Private Extension.

9. The MPOA server according to claim 7, wherein the MAC address is added as a normal MPOA Extension.

15 10. The MPOA server according to claim 7, further comprising:

means for specification of a network interface for cache imposition, of which the physical configuration is a kind of the ATM, and which is set to be logically MPOA-operable, among network interfaces of the own node; and

means for transmission of an MPOA Cache Imposition Request packet in which the following MAC address is included as a source MAC

- 20 address, and the MAC address of the network interface for cache imposition as a destination MAC address, when it is not judged that the physical configuration of the transmission network interface for the NHRP Resolution Request packet is a kind of the ATM and which is set to be logically MPOA-operable, and when it is judged that a MAC address is
- 25 added to the NHRP Resolution Request packet.

11. The MPOA server according to claim 10, further comprising:

means for transmission of an MPOA Cache Imposition Request packet in which the MAC address of the network interface for cache imposition is included as a source MAC address, and as a destination MAC

address, when it is judged that a MAC address is not added to the NHRP Resolution Request packet.

12. The MPOA server according to claim 10, wherein the network interface for cache imposition is a network interface which has received the
5 NHRP Resolution Request packet.

13. The MPOA server according to claim 7, further comprising:
means for transmission of an MPOA Cache Imposition Request packet in which the MAC address of the transmission network interface is included as a source MAC address, and the MAC address of the target as a
10 destination MAC address, when it is judged that the target is on the local subnet, the physical configuration of the transmission network interface is a kind of the ATM, and the transmission network interface is set to be logically MPOA-operable.

14. The MPOA server according to claim 7, further comprising:
means for reception of NHRP Resolution Reply packets;
means for judgment whether the NHRP Resolution Reply packet is addressed to the own node; and
means for forwarding the NHRP Resolution Reply packet to the next hop, when it is judged that the NHRP Resolution Reply packet is not
20 addressed to the own node.

15. A MAC address notification method comprising the MPOA server according to claim 1 and the MPOA server according to claim 7.